

**Amendments to the Claims:**

This listing of claims will replace all prior versions, and listings, of claims in the application:

**Listing of Claims:**

Claim 1 (currently amended):        A method for arbitrating a resource comprising:  
setting  $n$  weight values for  $n$  bidders in a corresponding one of  $n$  registers;  
setting  $n$  accumulator values for the  $n$  bidders in a corresponding one of  $n$  accumulators,  
wherein the  $n$  accumulator values are based at least in part on the  $n$  weight value;  
granting one of the  $n$  bidders access to the resource based at least in part on the  
accumulator value, and then decrementing the selected bidder's accumulator value in the selected  
bidder's accumulator; and  
~~increasing~~ incrementing the accumulator value in the  $n-1$  losing bidders' accumulators by  
~~a variable amount based on the accumulator value for the  $n-1$  losing bidders, one of a plurality of~~  
predetermined values, each of the predetermined values based on the accumulator value with  
respect to one of a plurality of portions of a range of accumulator values in which the  
corresponding  $n-1$  losing bidder's accumulator value is present, wherein a probability of the  $n-1$   
losing bidders for accessing the resource is increased based on a respective standing of the  
accumulator value within ~~a range of values for the accumulator value~~ values for the  $n-1$  losing  
bidders.

Claims 2 - 3 (canceled)

Claim 4 (currently amended):        The method of claim 1 wherein the accumulator  
values are initially set to a midpoint of  $[[a]]$  the range of accumulator values.

Claim 5 (currently amended):        The method of claim 1 wherein the range of  
accumulator values is based on a quartile, the accumulator value is incremented by one if the  
accumulator value is within 76-99% of the range, the accumulator value is incremented by two if  
the accumulator value is within 51-75% of the range, the accumulator value is incremented by

three if the accumulator value is within 26-50% of the range, the accumulator value is incremented by four if the accumulator value is within 0-25% of the range.

Claim 6 (currently amended): An apparatus to arbitrate access to a resource comprising:

a plurality of n registers to store n weight values;

a plurality of n accumulators to each receive a request to the resource and to accumulate and store n accumulator values, wherein the n accumulator values are based at least in part on the n weight values;

a comparator, coupled to the plurality of accumulators, to grant access to one of the requests based at least in part on the past history of granted requests and the n accumulator values, wherein each accumulator is to increment or decrement the accumulator value on a per arbitration cycle basis in response to the grant access by the comparator.

Claim 7 (currently amended): The apparatus of claim 6 wherein the comparator is to decrement the accumulator value of the accumulator that was granted access to their request in an amount corresponding to the n weight value associated with the accumulator if the resulting accumulator value would be greater than zero, otherwise the comparator is to decrement the accumulator value to zero.

Claim 8 (previously presented): The apparatus of claim 6 wherein the past history of granted requests is based on the accumulator's value being incremented if it was not granted access and is based on a quartile analysis as follows: the accumulator value is incremented by one if the accumulator value is within 76-99% of a range for the corresponding accumulator, the accumulator value is incremented by two if the accumulator value is within 51-75% of the range, the accumulator value is incremented by three if the accumulator value is within 26-50% of the range, the accumulator value is incremented by four if the accumulator value is within 0-25% of the range.

Claim 9 (original): The apparatus of claim 7 wherein the weight value for each accumulator is initially set according to a priority of the request.

Claim 10 (canceled)

Claim 11 (previously presented): The apparatus of claim 8 wherein a bidder that is to provide the request is either one of a modem, keyboard, video controller, serial port, or PCMCIA card, SONET interface, Ethernet Interface, content processor, encryption device, or compression device.

Claim 12 (original): The apparatus of claim 6 wherein the resource may be an interconnect bus, memory unit, or output buffer.

Claims 13 - 14 (canceled)

Claim 15 (currently amended): An article comprising a storage medium storing instructions that, when executed result in:

arbitrating a resource among a plurality of bidders, each one of the bidders with an accumulator value; and

granting one of the plurality of bidders access to the resource based at least in part on the accumulator value, and then decrementing the selected bidder's accumulator value, and ~~increasing~~ incrementing the accumulator value by a variable amount for the n-1 losing bidders, the variable amount based on ~~the accumulator value~~ a quartile analysis of the accumulator value with respect to a range of values for the accumulator value, wherein the accumulator value is incremented by a first value if the accumulator value is within a first quartile, the accumulator value is incremented by a second value if the accumulator value is within a second quartile, the accumulator value is incremented by a third value if the accumulator value is within a third quartile, and the accumulator value is incremented by a fourth value if the accumulator value is within a fourth quartile.

Claim 16 (previously presented): The article of claim 15 further comprising setting weight values for the plurality of bidders, wherein the weight values are initially set to a priority of each of the plurality of bidders.

Claim 17 (canceled)

Claim 18 (currently amended): A system comprising:

a processor;

a dynamic random access memory, coupled to the processor;

a plurality of bidders to access a resource;

an arbitration logic with a plurality of  $n$  registers to store  $n$  weight values to be configured by a user;

a plurality of  $n$  accumulators to accumulate and store  $n$  accumulator values and to each receive a request from the plurality of bidders, wherein the  $n$  accumulator values are based at least in part on the  $n$  weight values and initial values of the  $n$  accumulator values are to be configured by the user;

a comparator, coupled to the plurality of  $n$  accumulators, to grant access to one of the requests based at least in part on the past history of granted requests and the  $n$  accumulator values, wherein the arbitration logic is to decrement the accumulator value of the accumulator associated with the bidder that was granted access to its request in an amount corresponding to the weight value of the corresponding bidder if the resulting accumulator value would be greater than zero, otherwise the arbitration logic is to decrement the accumulator value to zero.

Claim 19 (cancel)

Claim 20 (previously presented): The system of claim 18 wherein the arbitration logic is to perform a quartile analysis on each of the losing bidders such that the accumulator value associated with each of the losing bidders is incremented by one if the accumulator value is within 76-99% of a range for the corresponding accumulator, the accumulator value is incremented by two if the accumulator value is within 51-75% of the range, the accumulator value is incremented by three if the accumulator value is within 26-50% of the range, the accumulator value is incremented by four if the accumulator value is within 0-25% of the range.

Claim 21 (currently amended): The method of claim 1, further comprising decrementing the selected bidder's accumulator value by a variable amount corresponding to the weight value for the selected bidder, or zero if the resulting accumulator value would be less than zero.

Claim 22 (cancel)

Claim 23 (previously presented): The method of claim 1, further comprising enabling a user to set the  $n$  weight values and the  $n$  accumulator values.

Claim 24 (previously presented): The apparatus of claim 6, wherein each of the plurality of  $n$  registers is coupled to a corresponding one of the plurality of  $n$  accumulators.

Claim 25 (previously presented): The apparatus of claim 6, wherein the  $n$  weight values and the  $n$  accumulator values are to be user configured.